THE

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CHEMIST

VOLUME XXXVII



NUMBER 10



Dr. Milton Harris AIC President, 1960-61

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THE AMERICAN INSTITUTE OF CHEMISTS

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To Come in November

Every chemist will be interested in the paper, "The Phrase Rule," by Edward L. Gordy, F.A.I.C., (see page 357), an expert in communications. Consultants will appreciate "Frank Words on Contract Counsel and Research" by Raymond Stevens, Hon. AIC, who summarizes his observations over four decades in the consulting field. Brief articles and Annual Reports of Committees will appear as space permits. "Copyright, Arthur D. Little, Inc.

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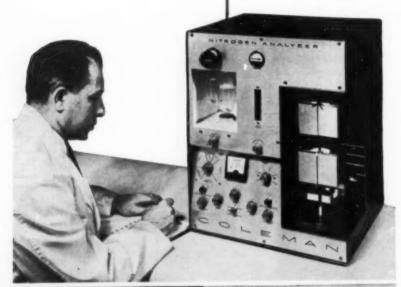
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EDITORIAL Culture Plus Competence

IN a paper entitled, "Some Implications of the Social Origins of Engineers," * Martin Trow of the University of California points out an important factor, frequently overlooked by engineering and science students, which will materially affect their future professional status. This is that to be a good engineer or scientist is not enough. The professional person must also know "how to think and behave in ways that gain respect from prestigeful people." To quote:

"Becoming a scientist or engineer, as we all know, is not simply a matter of acquiring certain skills and technical training. It is also a process of socialization, of the acquisition of values, aspirations, loyalties, and ways of thinking and feeling that surround and permeate the active living out of the occupational roles.

"Distinct from its function of equipping students with skills and degrees which can be translated into jobs and careers (and this is largely the way an engineering education is seen by students), some kinds of college education also serve to teach a style of life—how to think and behave in ways that gain respect from prestigeful people. This is the style of life and thought that lies at the heart of a recognizeable sub-culture of collegeeducated people in this country.

"Many engineers come to college with firm anti-intellectual attitudes, contemptuous or ignorant of the styles of life of the upper strata, with a suspicion of the Ivy League colleges and their products, human and cultural, as useless . . .

"By and large . . . lower-middle class boys are primarily instrumentally oriented—they are really interested in buying the skills and techniques and varieties of union cards that are acquired in college . . . Many tend to show little concern with the development of distinctive styles of life and the acquisition of special 'culture' . . . These boys, and their families, are concerned primarily with establishing the economic underpinnings for higher status."

At the beginning of this new school year, students of engineering and science should give regard, not only to the scientific, but also to the cultural facilities at their colleges. Through this combination of a practical and a cultural education, they will best prepare themselves for their future role as professional persons.

Special AIC Announcements

Chicago Chapter to Honor Edward Gordy

The Honor Scroll of the Chicago Chapter will be presented to Edward L. Gordy, F.A.I.C., communications coordinator, Standard Oil Company (Indiana), at a meeting to be held October 11, in the Furniture Mart Building, 667 McClurg Court, Chicago, Ill. The presentation will be made by Dr. Milton Harris, AIC President. Dr. Robert Marschner, of Standard Oil, will speak on "The Chemist-at-Large." Mr. Gordy's ac-

^{*}Scientific Manpower 1958. Papers of the 7th Conference on Scientific Manpower. National Science Foundation.

ceptance address is entitled, "The Phrase Rule." Mr. Gordy is cited for "his exceptional achievement in the field of public relations on behalf of chemists and their profession."

Twin City Chapter Officers

The Twin City Chapter announces the election of the following new officers for the fiscal year:

Chairman, Dr. H. L. Weisbecker, 2138 Berkeley Ave., St. Paul 5, Minnesota. (of Minnesota Mining & Manufacturing Co.)

Vice Chairman, Dr. John L. Wilson, 2101 Dudley Ave., St. Paul 8, Minnesota (of Economics Laboratory, Inc.)

Secretary, Mrs. Virginia Carletta, 357 Hope Street, St. Paul 6, Minn. (of The Toni Company)

Treasurer, W. W. Benton, 2069 Watson Ave., St. Paul 16, Minn. (of Economics Laboratory, Inc.)

National Council Representative, Dr. John L. Wilson

Alternate National Councilor,
A. C. Holler, Twin City Testing &
Engineering Laboratory, St. Paul
14, Minn.

Chapter Councilors: Dr. Lloyd H. Reyerson Dr. Joseph F. Abere Morris Kenigsberg

Beaver Falls Chapter Elects Officers

The Beaver Falls Chapter has elected the following officers:

Chairman, Dr. Fritz Rosenthal, Director, Product Development Research Department, Knowlton Bros., Inc., Watertown, N. Y. Chairman-elect, Dr. William W.

Chairman-elect, Dr. William W. Wagner, Fiber Products Research Center, Inc., Beaver Falls, N. Y. Secretary, John C. Parsell, Chief

Secretary, John C. Parsell, Chief Chemist, The J. F. Lewis Co., Beaver Falls, N. Y. Treasurer, Paul E. LaValley, Fiber Products Research Center, Beaver Falls, N. Y.

National Council Representative, Clark E. Thorp, President, Fiber Products Research Center, Beaver Falls, N. Y.

Committee Chairmen:
Arrangements: Carlton G. Force
Membership: F. G. Sommerville
Publicity: Beaumont Thomas
Student Medal Awards:
Dr. W. W. Wagner

Student Medal Committee Names Members

John Kotrady, chairman of the Committee on Student Medals, announces that Chester A. Amick, Emeritus F.A.I.C., and Dr. D. L. Cottle, F.A.I.C., have been appointed to serve as members of this Committee.

New AIC Brochure

An attractive, new brochure about THE AMERICAN INSTITUTE OF CHEMISTS is now available on request to the AIC Secretary. Richard L. Moore, F.A.I.C., chairman of our Committee on Public Relations, designed this brochure with the cooperation of W. R. Grace & Co., New York, N. Y.

To New Chapter Officers

New Chapter Officers, who have not yet received a copy of "Chapter Operations—a Manual for Chapter Officers and Councilors," may obtain one on request to the Secretary, The American Institute of Chemists, 60 East 42nd St., New York 17, N. Y.

To AIC Members

Please see pages 387 and 388.



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Personal Responsibilities of Professional People

Andrew H. Hines, Jr.

Director, Area Development, Florida Power Corporation, St. Petersburg, Florida

(A condensation of a paper presented at a meeting of the Florida AIC Chapter, at the Cherry Plaza Hotel, Orlando, Florida, May 14, 1960.)

ALL who have been involved in organization or management work know the close relationship between authority and responsibility. It is fundamental to success that these two qualities go hand in hand. When they are separated, trouble is inevitable.

As mature professional men, you have a status and a recognition in the eyes of your friends and neighbors. You have concurrently with that authority certain responsibilities. In considering these responsibilities, I assume that each of us has fulfilled those individual responsibilities exemplified by our religious and our cultural duties . . . These are so fundamental that we can only approach our professional responsibilities after we have discharged these deep, personal obligations.

There are four basic areas of professional responsibility. They are those in which people of scientific and technical training are especially interested and they are in areas with which scientific people are closely identified in some cases. In other cases, the relationship of our professional training to the sphere of responsibility is not apparent at first glance, and some of us have neglected duties which we properly should assume.

(1) Alleviate the Shortage of Engineers and Scientists

I propose that we first consider the national shortage of engineers and scientists . . . Since I am an engineer, I will deal with the engineering situation. The same story holds for scientists. The first consideration is that the supply of engineering graduates in 1959 consisted of 38.162 B.S. degree men. The second is that most of these men had a wide variety of choices of jobs prior to leaving college, and that present recruiting practice involves signing up many of them early in their senior year. The third fact is a report by the Engineering Manpower Commission-Engineers' Joint Council that firms recruiting engineering graduates state that their requirements will increase by a 50% factor during the next seven years. The fourth significant fact is that engineering enrollment is declining rather than increasing.

When these facts are placed together, we find ourselves with the framework of a serious problem, that of the development of a satisfactory

and capable pool of manpower adequate to meet the future requirements of science and industry. We may propose panaceas. We may propound the increased use of technicians and the more efficient utilization of engineering manpower. We may propose higher salaries or government subsidies. Whatever alternatives we propose, however, we are confronted inevitably with the rock-bound fact that we must increase the number of engineering students in the U.S. We do not need a red flag-I use that word in a literal sense-waved in front of us to make this point clear . . .

You may ask, "What should we do about this, and what is our professional responsibility in this case?" I feel most strongly that we, as professional people, have a definite responsibility to channel into science and engineering those young men and women who are qualified and adaptable to this type of activity. We need to be conscious and active in our vocational guidance responsibility.

How can we discharge this responsibility? The opportunities for work in this area are innumerable and immensely gratifying. They will not seek us out. We must search for them. The starting directions are easy. Contact your local high school. Offer to speak before the students on the vocational day which most high schools now have. Go beyond this. Offer to talk before the high school science club or the local astronomy

club, camera club, or other club of this nature. If such clubs do not exist, take the initiative and help in their formation. You will find this work greatly rewarding.

If you will recall the days when you were considering a vocation, you may remember that your own knowledge of science or engineering was a hazy one. Many of you stumbled into your present career. It is fortunate for our nation that you did so. However, we cannot depend on good luck to meet the requirements of the future. We must, at the local high school level, encourage students capable of following scientific careers.

Our responsibilities go beyond this. I also commend to your attention work with your local school authorities on such subjects as science and mathematics. I have had the pleasure of serving on the Citizens Curriculum Committee of the Pinellas County School System, I have had the doubly gratifying pleasure of seeing some of our recommendations placed into effect, including different types of diplomas, increased laboratory facilities, and now a technical high school. This work is both engrossing and rewarding. You may find conditions that you want changed. If so, make your recommendations clear and back them up. Then, do not stand idle and see your report collect dust in a file cabinet. Work to see it implemented and carried out. Only by so doing can you make the concrete achievements



Florida Chapter Officers; R. A. Nanz, Secretary; D. H. Killeffer, Chairman; Dr. A. W. Buswell, Councilor; H. Gropp, Chairman-elect, with Speaker, A. H. Hines, Jr.

and contributions of which you are capable.

(2) Interpret Scientific Progress to the Public

Another area of responsibility, allied to the first, is concerned with interpreting a fast-changing technology to the general public. We are living in an era of compressed time. The first steam turbine was developed by a Greek named Hero, who lived in Alexandria, Egypt, about 100 years B.C. Almost 2000 years elapsed before the steam turbine was developed to a point of usefulness and began to assume its share of the burdens of mankind. This work was carried out during the latter part of the 19th century, within the memory of many alive today.

Preliminary studies on jet propulsion for aircraft were carried out by the NACA under Buckingham during the early 1920's. The first jetpowered plane flew in August, 1939, at the landing field of a German aircraft factory. Between the conception and actual operation, a period of 17 or 18 years elapsed.

Experimental work carried out by physicists, here and abroad, indicated that a chain reaction would be possible, utilizing uranium isotopes. This work was carried out in the '30's and reached fruition during the latter part of that decade. On December 2, 1942, the first sustained chain reaction was carried out in the atomic pile located underneath the football stands at Stagg Field at the University of Chicago. In 1957, the Shippingsport Power Reactor of 60,000 KW capacity, went critical near Pittsburgh, Pa.

These examples make the point. Whereas developments formerly took hundreds of years to bring from the first idea to concrete reality, the time is now measured in decades or even in years. If we want to consider the impact of this fast-changing technology on our everyday life, we have only to think about the type of life led in this country in 1910. The air-

plane was in its infancy. The vivid demonstrations of wireless telegraphy given in the sinking of the "Titanic" were two years ahead. Television did not exist. The automobile was a rich man's toy. Refrigeration was carried out by means of natural ice stored during the summer or else by steamengine-driven ammonia plants. Food preservation was in the jar-and-tincan era.

When we review the developments during the past 50 years, we are driven to the conclusion that we do truly live in an era of compressed time and that the only thing characteristic of our era is continuous and rapid change. We are reaping the benefits of past research and development. When we consider that funds devoted to research have now increased to over \$12 billion a year, we need no further clue as to how much more time will be compressed in the future.

While science, technology, and engineering have achieved great progress, the general public is largely ignorant of the fundamental causes and reasons for change. Most people are not aware of some or any of the basic principles which have brought about technological progress . . . Some say that the public is not interested and that they do not care. I disagree. I believe they are much interested in science and scientific progress. They have had, however, few people who could interpret the progress of scientists in everyday terms and analyze

this progress to them. They have come to take scientists for granted and to regard them as being a rather curious, freakish group of people who are idealistic and unrealistic. They have many misconceptions about science as a career. These are reflected in the attitudes of their children and in the engineering shortage which our country faces.

As professional people we have the responsibility to interpret science to our friends and neighbors who are not familiar with the language. We have the responsibility to place our profession before them in terms that they can understand and appreciate. Until we fulfill this responsibility, scientists and engineers will be misunderstood; not properly appreciated, nor properly respected, as professional people. The cooperation we need will be withheld. We have a direct and pressing responsibility here which we should meet squarely.

(3) Encourage Area Development

There are other regions of responsibility, some of which are allied to the field of science only in a sense that our training and background make us peculiarly adaptable to meeting and solving some of the problems involved.

All of us are interested in the economic development and progress of our area. We in Florida have followed with interest the progress made in attracting the electronics and technical industries to our state and we recognize the advantages of this area for research and development activities. We have been gratified by the heavy growth which industry has shown in Florida. The Manufacturing Chemists Association has given heartening figures indicating that during some years Florida has been second in the nation in terms of chemical-plant construction. Scientists and engineers can make a major contribution toward the future industrial growth of this State.

When we speak of the future industrial growth of an area we are speaking of the most fiercely competitive field in existence in America. The number of agencies and groups engaged in trying to attract new industries and new payrolls into their area number between 6000 and 8000. They offer every conceivable inducement and type of assistance, ranging from free sites to tax exemptions for periods up to ten years. We in Florida are not able to offer some of these inducements nor indeed do many of us feel that they are necessary. However, we do operate in an intensely competitive atmosphere and need all the help we can get.

You, with a background of training and a career in the chemical industry, could be of great help to those of us who are engaged in the development of the economy of Florida. You have many personal friends and many contacts in the chemical industry. You know firsthand of expansion plans. You would be of great help if you would contact such agencies as your local Chamber of Commerce, the Florida State Chamber of Commerce, the Florida Development Commission, or indeed the local utility which might serve your area. All of these agencies and groups are in this battle for new industries. Advance information and inside information are of incalculable assistance in helping to bring new industry to an area.

By serving on your local Chamber of Commerce industrial committee and by injecting yourself into the industrial-development picture, you can have a part in building your local economy. This opportunity carries with it an obligation that you take such action. You owe it to your community and to your area to participate actively in its promotional efforts, You will find some of this activity proceeding along a basis which you do not understand nor perhaps appreciate. Do not let this discourage you; rather, move forward and make your contribution. Those engaged in this activity will welcome and solicit your assistance.

(4) Participate in Political Affairs

There is a further sphere of operations which is of great importance in our society today. This is the sphere of governmental action, local, county, state, and national. If we fail in our responsibilities in this area we lose everything.

History teaches that there are two basic forms of government, and the whole record of political progress through the ages is manifested in a choice between these two forms. Although we may call each by a different name, human beings throughout history have essentially had to choose between a government in which people existed for the benefit of the State or a government in which the State existed for the benefit of the people. In America, we have through the past few generations been blessed with the latter form of government. It evolved naturally out of a great conflict against our Mother country and was hammered into a durable and lasting structure in the forges of war and frontier struggles. Under its domain, we have achieved material progress and physical benefits which exceed the wildest dreams of past generations.

In spite of the progress the U. S. has achieved under this governmental system, there are strong forces in our nation who are seeking to change it. Having failed in the past to achieve such changes by external war or by elections, they have chosen another means. They are approaching the destruction of our form of government by the slow and steady process of corrosion from within. In a long and well-planned series of moves, they are acting to force dependency of the individual upon the State. If that de-

pendency is achieved, we can be certain that direct and close control of individuals by the State will follow on its heels. Under the guise of freedom of opportunity and equality, some leaders in our nation today are seeking to mold the American people into a uniform, homogeneous mass having neither character, integrity, nor individual ability. We find forces in our nation seeking to place into effect the British socialist philosophy of government control from the "womb to the tomb."

I cannot over-emphasize the gravity of the danger which we face here. Freedom has been won by nations throughout history only as a result of long, difficult, and hazardous struggles. It has been repeatedly lost by complacency and the attitude of "let the other fellow do it." Whether our trend away from freedom is manifested by a growing national slogan of "something for nothing" or a lack of appreciation of our fundamental duties and obligations makes no difference. The net result is the same. Such a path down which we are now traveling can only end in disaster to freedom.

It is in this area that our greatest professional responsibility lies. As scientists and engineers, we are trained to think clearly and logically. We are instructed on the separation of the "gobbledygook" from the meaningful sentences. We are able to discern the underlying motives by application of

logical thinking. We can strip away the emotional trappings which make so many schemes attractive at first glance. We have a great responsibility to ourselves, to our nation, and to our profession to use this ability to think logically in meeting the problems of government today.

I do not propose that all of you run for public office. I do propose that you think about a more active and more dedicated participation in all branches of government. The ripe experience of many members of the science and engineering professions imposes on some of them the special duty of gentle and helpful guidance to those who follow and who are still acquiring that experience. I propose that you think over the qualifications of candidates and study their records: that you try to separate their promises from their potential and their past from their platitudes. I propose that you make your opinions known to your neighbors and to your government leaders on all levels. I do not state what these opinions should be-only that you use the ability to think and the analytical skill which years in the scientific fields have developed. I am content to risk our nation's future on the outcome.

These responsibilities which face you as professional men are the direct result of the unique position which you hold in today's society. You occupy a prominent place in the elite of the culture of 1960. You face the responsibilities which such a position carries with it. You owe to yourself and your posterity a careful review of these responsibilities and an active and outgoing interest in discharging them to the best of your ability in the years ahead.

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Current Legislation

There is a drive underway to change the Senate and House rules in such a manner that it will destroy the protection now available against pell-mell enactment of dangerous legislation. This is scheduled for the opening of the 87th Congress in January. It has two major objectives:

(1) To place rigid restrictions on the right of Senators to discuss fully and freely the merits of legislation under consideration. This certainly would limit free speech and endanger the rights of groups, particularly minority groups, to voice their position.

(2) The proposal would result in curbing the power of the House Rules Committee to regulate the flow of legislation to the House floor for a vote. This would result in the legislative process running rampant.

It is urged that AIC members give their views to their members of the Senate and House. This must be done before Congress reconvenes because the proposed changes are scheduled for consideration at the opening of the new session.

Another legislative matter of importance is that pertaining to patents arising from the Space program. The House, after a long study, passed the Brooks Bill (H.R. 12049) which would permit private contractors of the Space Agency to retain commercial rights to patents, the Government having a royalty-free license. The Senate failed to pass the Brooks bill. It is of interest to scientists to pass this legislation. Under present law the NASA must take title to the patents, even though the Government has no interest in doing

Professional Material Available

(Free unless otherwise noted)
"Patents and Inventing," article in Technology and Culture, Summer 1960 issue, by I. Jordan Kunik, F.A.I.C., patent lawyer, 521 Fifth Ave., New York 17, N. Y. Request from the author.

"Deterioration of Book Stock—Causes and Remedies." Two studies on the permanence of book paper, by the Virginia State Library. Request from Hercules Powder Co., Wilmington 99, Del.

"Federal Aid to Education," Speech of Hon. Styles Bridges in the Senate, April 18, 1960. Request from author, Senate Office Building, Washington, D.C.

"Federal Aid to Education Through Contingent Tax Benefits," by Dwight K. Alpern. Reprint from School & Society, Feb. 27, 1960. Request from author at Brooklyn College, Ave. H and Bedford Ave., Brooklyn, N. Y.

"Food Additives Manual, Part 4, How to Proceed Under the Food Additives Amendment," Manufacturing Chemists' Association, Inc., 1825 Connecticut Ave., N.W., Washington 9, D.C.

"Scientific Manpower 1959." Papers of the 8th Conference on Scientific Manpower, June 1960. National Science Foundation. Available from Superintendent of Documents, U. S. Gov. Printing Office, Washington 25, D.C. (30 cents).

"A Brief Anthology of Fundamental Scientific Research." Brief Quotations. Request from Mellon Institute, Pittsburgh 13, Pa.

"A New Profession to Aid Management."

16th Charles Coolidge Parlin Memorial
Lecture. By Marion Harper, Jr., President & Chairman of the Board, McCannErickson, Inc., 485 Lexington Ave., New
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"Statistical Handbook of Science Education." National Science Foundation. For sale by Superintendent of Documents, U. S. Gov. Printing Office, Washington 25, D.C. (55 cents).

"Instrumentation, Engineering—Progress, Problems, and Promise." Address by Dr. Arnold O. Beckman, Hon. AIC, President, Beckman Instruments, Inc., 2500 Fullerton Road, Fullerton, Calif. Request from the author.

"The Independent Laboratory and the Trade Association." Brochure. Foster D. Snell, Inc., 29 West 15th St., New York 11, N. Y.

"Chemical Statistics Handbook." 521 pp. Manufacturing Chemists' Association, Inc., 1825 Connecticut Ave., N.W., Washington 9, D.C. (\$3.00).

"Guidance That Pays," Elaborate Brochure on Management Information. Request from Elliott Service Company, Inc., Mount Vernon, N. Y.

Mid-Career Review

ARE YOU REALIZING YOUR FULL PROFESSIONAL POTENTIAL?

Robert F. Moore

Vice President, Richardson, Bellows, Henry & Co., Inc., 355 Lexington Ave., New York, N. Y.

(Presented at a panel discussion held at the March 24, 1960, meeting of the New York AIC Chapter.)

A satisfied person is not only standing still, he is slipping backward. This panel discussion will make you a dissatisfied person—either with us or with yourself!

Over the years it has been my good fortune to meet many chemists and engineers. I had a visit recently with one of these long-time friends who had telephoned me from his home in Virginia to ask whether he could impose upon my Saturday to discuss a personal problem. I have enough personal problems of my own on Saturday, but such was the urgency of his voice that I invited him to my home in Scarsdale.

My friend, Tom Rich (a fictitious name), arrived somewhat in a state of occupational shock. Until a few weeks ago he had been quite satisfied with himself—pleased with his position, his company, his salary, his boss, his home and family. Everything had been going fine and he had been given a nice raise in the past six months. Then one day his immediate boss was taken to the hospital for a serious operation and the senior vice president took over.

The story Tom told me took three hours, so I will spare you the details.

But Tom learned for the first time that the top management of the company was not happy with him. While the results of his department were satisfactory, he learned that his staff complained about him as a hard task-master, requiring extra long hours of work on a continuous crash basis. He learned that the heads of other departments did not like his methods, and that the senior vice president, himself, did not feel that Tom was handling himself well.

At age 45, having left a good job a few years back to join this company, Tom was deeply distressed and concerned about the whole situation. The news of the dissatisfaction of management was a real shock and surprise to Tom. He needed to get his bearings.

After the story was told, he asked me several questions: Should he stay and try to repair the damage to his relationships? Should he accept a demotion? Should he leave? If so, how would he explain the situation? Who could he give for references? And a dozen others.

There are at least two sides to every story and I am sure that Tom was not entirely at fault. The company organization, the lack of communications, the failure of his own boss to tell him how he was doing contributed to his dilemma.

Tom felt a lot better after he got his story off his chest and I told him I would be glad to advise him as he worked through the situation. I did suggest that he come in to our shop for a mid-career review with our Psychological Assessment staff. (Incidentally, mid-career can cover ages from 30 to 70!) I felt I could be much more helpful to Tom if I had an independent assessment of his strengths and weaknesses. He, too, would better understand himself as a result of our independent appraisal. He jumped at the opportunity and visited our office.

Tom and I found in the results both confirmation and clearer avenues of approach to the problem. The results showed him to be of very superior intelligence, in the top 2% of the general population, highly analytical, a perfectionist, a creative thinker, and with good emotional balance and lots of drive. (His interests turned out to be more in the scientific and theoretical areas and better suited for staff work than in the field of sales management in which he is working.) But it was quite clear in all the tests and interviews with the three psychologists that he had an insensitivity to people problems and that it was, therefore, hard for him to understand how to maintain effective relationships.

Armed with this picture of himself and the assurance that he can improve his relationships if he will work hard to correct this weakness, Tom returned to his job in Virginia. I wish I could tell you how the story ends, but this is only the beginning. Tom's mid-career review has given him a basis for him to work out his next twenty years.

This story could happen to any one of us. But why wait for a crisis to push us into action? Why not use our training and our experience in analysis and the scientific approach to conduct our own mid-career review?

We are now entering the Sixties, a new decade of opportunity and a fresh challenge. We will be confronted with more competition, from more people in an exploding population. On every front are new challenges, in political, social, economic, international, technical and educational affairs. Who would have believed that we would be preparing to land a human being on the moon? But we are, and it can happen in the Sixties. There is not just changing times ahead, but accelerated fast change. We must all ask ourselves, as individuals, how well are we prepared?

The best in us will be demanded to keep pace with the Sixties. This is why it is important to ask, "Are we achieving our fullest professional potential?" This is why a Mid-career Review is timely.

As we work up the salary curve in our forty years of allotted work time, people tend to stratify themselves. The Engineers Joint Council salary graph for chemical industry bears eloquent witness to this fact. Note the five levels: lower decile, lower quartile, median, upper quartile, upper decile.

Of course, you may be achieving your full professional potential on whatever curve you happen to be on, but can you be sure without a careful and thoughtful analysis of yourself and your progress.

Without going into detail, let me suggest the steps you can take to conduct your own Mid-career Review.

The following instructions are based on a rating guide, used in my book, How Am I Doing? The first step is to ask yourself:

What Are My Objectives?

Just as corporations work out what they call "Management Objectives," it is just as important to your personal long-range planning that you work out your goals. This is a hard task because it calls for a lot of hard-headed thinking and some searching. You must think in terms of the ideal and also the realizable. You have to ask what you want out of life for yourself, your family and your community. Against the background of your own realistic objectives, you then

can work out your review. These are some of the questions you will be asking yourself with the rating sheet as a guide:

1. How is my progress to date?

Under question No. 10 on the rating sheet, questions are raised about whether you are in the right field of work, the right position for you to realize your full professional potential?

2. How effective is my perform-

Facts speak louder than blurbs, so think in terms of actual accomplishments, special contributions, results achieved. Have you been compensated or rewarded for your achievements?

3. How effective is my personal relations?

This is an important key question, particularly when we recall the case of Tom Rich. Relationships must be thought about on all levels: Your bosses, your associates, those you direct, your neighbors, and your customers.

4. What are my work characteris-

As you will note, these relate to your skills, attitudes, work habits, decisiveness, creativity, ability under pressure as well as quality and quantity of work.

5. What are my aspirations and drives?

Do you want money, position, fame, service to mankind? How strong is your urge, dedication, and drive to reach your goals?

6. What are my interests and values?

This is really an extension of question No. 5. What do you like to do and how do these interests relate to your work? What also do you value in life—human affairs, aesthetic fields, practical matters, theoretical approaches?

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7. How is my personal adjustment?

In other words, how can I stand pressures, crises, success, disappointments? Do I have any personal characteristics that need attention, modification or elimination?

8. How is my intellectual function in a?

According to one test result, most technical and scientific people rate in the top 5% of the general population. The question is not how smart we are, but do we use the brains we have.

What is the company or organi zation climate?

This refers to the atmosphere and spirit of the organization, the conditions under which you work, your boss, your associates, the opportunities for growth. Successful performance is a 50-50 sharing of objectives between you and your organization.

10. How well qualified am I for my position?

This is question No. 1 on the rating sheet, but I have reversed the order so you can keep in mind the previous nine questions as preliminary to asking yourself whether you are in the right job or headed in the right direction. If you have a job description, you can compare your qualifications with the educational, technical and experience requirements of your present work.

Now that you have an understanding of your potential, you will be ready to work out a plan, a program, and a time table to work toward your goals. What further steps do you need to take for your personal development? Do you need more technical skill, more personal effectiveness, more scope for your talents?

In closing, I quote the late Charles F. Kettering:

"Once you've failed, analyze the problem and find out why—because each failure is one more step leading up to the cathedral of success. The only time you don't want to fail is the last time you try."

About AIC Members

Dr. Arthur Rose, F.A.I.C., at his own request, has been relieved of instructional duties as professor of chemical engineering, The Pennsylvania State University, to direct revision of the Condensed Chemical Dictionary and Distillation Literature Index & Abstracts, and to work at Applied Science Laboratories, Inc., State College, Pa., on the freezing process for saline water demineralization and on preparation of high purity fatty acid standards for lipid chromatography. He will continue the direction of his graduate research program at the University.

Dr. William H. Lyean, F.A.I.C., of Johnson & Johnson, Inc., New Brunswick, N. J., has been elected chairman of the American Section of the Society of Chemical Industry.

Dr. Lincoln T. Work, Hon. AIC, consultant, New York, N. Y., is now president of The Chemists' Club, New York 17, N. Y.

(And see pages 383-4)

How to Set Personal Goals

William Oncken, Jr.

Staff Member, Richardson, Bellows, Henry & Co., Inc., 355 Lexington Ave., New York, N. Y.

(Presented at a panel discussion, held March 24, 1960, by the New York AIC Chapter.)

SOMEONE once defined luck as "what happens when preparation and opportunity meet." If we accept this definition, then luck is a significant and important part of the chemistry of career development. Thus:

preparation + opportunity → luck Moreover the timeliness and adequacy of one's preparation is determined by the standard or requirement one wishes to meet, as well as his capacity for, and his interest in, meeting it. Thus

requirement + capacity + interest
→ preparation

In our discussion, we will assume that the individual is living and working in a business, professional and social environment that presents more than enough opportunities for him to take advantage of, whenever he is prepared to do so. Accordingly, we will limit ourselves to a discussion of how one can maximize the right hand side of our second equation.

Capacity

A facing-up to one's capacity comes first. There is little point in deciding to meet the requirements for becoming a successful manager, scholar, or teacher until one has assessed his capacity for the timely realization of any goal he may set for himself.

The first step is to decide how much time, outside one's normal workday, one can afford to devote to preparation for the next step toward his goal. No one can afford to assume that he will realize his highest potentialities on time merely by being carried effortlessly upward on life's escalator of jobs "well done." He must gain on the escalator by climbing with it.

To engage in career planning without having committed oneself to at least four invoilable hours per week of hard work in self-improvement is as dilettante as studying daily stock quotations without having set aside a certain proportion of one's income each month for regular investment purposes. Speculating with one's limited time is no less irresponsible than speculating with one's hard earned money. Both are forms of self-indulgence that in the long run lead to disappointment.

Whether one has the capacity to set aside and systematically utilize this time every week depends on his conviction that he can increase his value to himself, his employer, and to society, only by working on himself. An analogy might be helpful. An ounce of high grade steel sells for a few cents. Beaten, drawn and annealed into fine hairsprings, it will sell for dollars. It is still just an ounce of steel. But the work done upon it has

increased the demand for it.

The work a man does on shaping his career will, in the same way, increase the demands others will make upon him, as well as the recognition and rewards they will confer upon him. But standing still upon an upward moving escalator "taking promotions as they come" and waiting for the next step to "come along" is less than adequate.

The first measure of one's capacity for career development is thus a proven record of regular weekly application to the work of self-improvement during some significant period in his life.

The second measure is the effectiveness with which he spends this time. This shows up in the resulting changes in his professional, social and business behavior and skill.

The most powerful deterent to constructive change in one's performance, behavior and outlook is something the psychologists call the human tendency to retreat to the familiar. The habits and methods that have served us well in the past eventually become, through constant use and re-use, so much a part of us that we rely on them to serve us without having to give them any thought. This is a great luxury. It is like having a servant who anticipates your every need, whim and wish. However, if your needs, whims and wishes were suddenly to alter their traditional

pattern, the servant's usefulness would sharply diminish. This would make him more a bother than a help, and you would tend to retreat to your old pattern so that he could again become as delightfully useful as before. So it is with our other servants, our habits of thought, communication and action. They tend to rule us. If we habitually retreat, we will never rise above them. To make them change with us is hard and often unpleasant work.

For example, sign your name on a piece of paper. Turn the paper over, and sign it again omitting every other letter. It should be easier and faster since it takes only half as much ink. Did you have trouble? The mere recognition that it should be an easier and faster method was not sufficient to enable you to adopt it with ease. It would take time and hard practice to overcome the regressive force we call "the retreat to the familiar."

Interest

It may seem to be putting cart before horse to discuss capacity and interest before requirement, or career goal. Most of us decided upon our goals without having paid attention to our capacities and interests. This is just where career disappointments often start.

Capacity, as we use the word, is analogous to the "scalar" quality in mathematics. It has magnitude, but not direction. Interest, as we shall refer to it, has "vector" characteristics, involving direction as well as magnitude.

The primary measure of a man's interest in the development of his own career is his success in determining, at each stage in his career, how he stands. Taking this kind of a "career inventory" is an integral part of the effort he puts into the four-hour-perweek minimum we spoke of earlier. To know what one's goals are is not enough. This must be supplemented by periodic assessments as to where one stands in relation to these goals.

Let us resort to analogy. The skipper of a ship has a specific destination in mind. Knowing his destination is a necessary condition for getting there, but not a sufficial one. To plot a course, he must know where he is in relation to his destination and why he is where he is. This will tell him the direction he must travel and in what direction he must now point to compensate for the forces of wind and tide that account for his present position. Thus the sailor may point to the northwest to reach a port to the northeast if wind and tide dictate this tack.

In navigating the turbulent sea of career development, successful men have shown the same skill, pointing this way, now that, in order to use to their advantage the professional, social, business and psychological forces that, from time to time, were temporarily preventing unidirectional progress toward their goal. Had they not understood how to recognize and utilize forces beyond their control, they might have continued doggedly to point in the direction of their goal, and for this reason, failed to attain it.

Self-appraisal in relation to one's career goal is perhaps as difficult a task as any in the process of career preparation. There are pitfalls. Since each of us is at once his own greatest admirer and severest critic, the conflict can lead to a stultifying frame of mind which shows itself in indecisiveness. This undermines our capacity to spend our four hours a week profitably—so we may drift.

To overcome this, we should avoid consulting our inner admirer and detractor, and do as the sailor does, "shoot the sun," and go about self-appraisal objectively. How can this be done? Bobby Burns felt that this required nothing less than the gift of God. We agree. The problem is merely the proper use of that gift. We offer the following suggestion.

Assuming that you now hold a position in a firm, imagine for a moment that you have just been promoted to succeed your immediate superior, thus leaving your present position vacant, and that you have been assigned to find your replacement.

Your first inclination will be to establish standards against which you wish to measure the qualifications of the candidates you will be considering. Let us assume that you are looking for a man (1) who will serve you better than you have been serving your superior up to now, and (2) who will be better prepared eventually to replace you when you move up again.

Having established this over-all standard, take a personnel appraisal form, applicable to the kind of job you now hold, and rate each element according to your minimum standards for that element. The result will be what you would expect of your successor.

Your success in doing this will depend largely on the kind of rating sheet you use. If it predominates in traits such as imagination, loyalty, cooperation, drive, etc., you will have trouble. These qualities are of neutral value: Al Capone had them, so does Billy Graham. You will have to spell these out in terms of the things that tend to happen on this job when one has, or does not have, these traits to an outstanding degree. It may be that in your present job your "cooperation" may show up in the average amount of lead-time your colleagues can consistently count on in meeting your administrative requirements. If so, you should express the element "cooperation" on your rating sheet in these terms, and specify the minimum lead-time acceptable in your successor's performance.

When you have completed this exercise, you will have an objective basis for knowing where you are in relation to your present career goals. The difference between your present behavior and performance and those of the man you would want to replace you will tell how far off course you are. You will now be ready intelligently to do something about it, unhampered by the conflict between your admiring self and your critical self.

A word of caution: Put your efforts on building up your strong points. These have brought you successfully, in spite of your weak points, to where you now are. Correct your deficiencies only enough to keep them from hindering your progress. This keeps the hard work of self-improvement both constructive and objective, so necessary to the maintenance of one's morale or interest.

Requirement

It is now apparent why we left to the last the discussion of one's career requirement or goal. A man is not ready to evaluate his present goal or to adopt a new one until he has successfully done his homework in the earlier two areas of capacity and interest.

Less than 50 per cent of the graduates of Princeton University in 1934 are now engaged in work related to their career aspirations at that time. This may be typical. Were these men blown off course, or had they assessed their capacities and interests before deciding upon their career requirements? Probably some of both,

possibly weighted toward the latter. For a man who does not know his capacities and interests cannot arrive at career requirements that are high enough to challenge him and realistic enough to be attainable. Then, when he is not progressing satisfactorily he is not prepared to take corrective action. So he tends to adopt substitute measures.

The most important of these is to convince himself that he is not "cut out" for his selected goal. While he may be right, he may not have taken the trouble to know whether he is right. The four-hour per-week test of his capacity will also be the test of this.

Helen Keller was a "natural born" social misfit. She lacked the basic instruments of social intercourse. However she had developed an enormous capacity for self development and, because her approach to life was both objective and constructive, she maintained the necessary interest in applying it. Her goal of becoming a great communicator thus became, for precisely these two reasons, both high enough to challenge her and realistic enough to make her efforts worth-while.

While native talent is important, capacity and interest are the overriding factors in the realization of one's highest career potentialities. Both must be developed.

When they have been developed, the time will be ripe to decide upon career requirements with the confidence necessary to assure their attainment. They will change both in magnitude and direction as we "tack" over the course, but as long as we can consistently match preparation with opportunity, luck will be with us.

The Industrial Building Exposition and Congress will be held at the Coliseum, Dec. 12-15, 1960. For information, Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

After making an exhaustive study, Charles E. Stech concluded that "the basic traits of leadership" include: (1) good judgment, (2) ability to make decisions on the basis of facts, (3) ability to plan—to see ahead, (4) fairness in dealing with others, (5) ability to remain unruffled in the face of criticism, (6) honesty, (7) open-mindedness, (8) initiative, (9) decisiveness, (10) enthusiasm, (11) courage, (12) a fundamental religious background, and (13) resourcefulness."

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Communications

Effective Program

To the Editor:

You will be interested to know that the program of the Florida Chapter (page 325, September CHEMIST) has already started working. Only this morning I had a telephone call from a town where they greatly need someone to teach chemistry in the high school . . . Also we have been working up a hopeful young industry to utilize some waste products around here for a badly needed purpose. Two of our members are working on the latter project and we were able to suggest three eminently qualified people who might like to help out in the high school.

-D. H. Killeffer, F.A.I.C. Clearwater, Fla.

About AIC Membership Certificates

To the Secretary:

Thank you for . . . my certificate of membership. It is an extremely impressive work and I shall be proud to have it framed and hung with my diplomas.

-Dr. Roger P. Maickel, M.A.I.C. Bethesda 14, Md.

To the Secretary:

The AIC certificate is beautiful indeed, but is overshadowed by the honor of being accepted to membership in the AIC. It is good to have a certificate to remind one not to rest on laurels, but to be more worthy.

—Sydney C. Schachtmeister, F.A.I.C. St. Joseph, Mich.

Local Offices Will be Alerted

To the Editor:

The article encouraging the use of the State Employment Services was well developed, put our program in a proper perspective . . . (The Chemist, September 1960, p. 341). I am going to inform our State agencies . . . They will in turn alert their local offices so that adequate assistance can be provided to any chemist or chemical engineer who desires placement assistance.

-Wilbert Stitzenberger
Chief, Industry Relations Branch
Bureau of Employment Security,
USDL Washington 25, D.C.

For Your Library

Medicinal Chemistry

Second Edition. Alfred Burger, Editor. Interscience Publishers. 1960. 1014"-71/2". 1242 pp. \$37.50.

Since the first edition of this authoritative treatise, in 1951, all aspects of medicinal chemistry have advanced so rapidly that revision was imperative. The complexity of that progress was such that no one author could possibly prepare a comprehensive text within a reasonable space of time. Therefore, Professor Burger called on 34 other specialists in the field: Chemists, pharmacologists, biologists, as well as doctors of medicine. With their specialized help the original edition has been increased by 12 chapters, includ-

ing one by Dr. Burger on drugs for irradiation sickness.

Moreover, the entire book has been rewritten to bring it completely up to date. Naturally, this has led to a greatly expanded list of references for each chapter. These include the literature up to the end

of 1957.

Of particular interest to medical men are the chapters on vitamins and antibiotics which contain material not yet collected in up-to-date monographs. But for the layman, Dr. Burger's chapter on the historical development of medicine makes fascinating reading, and the table giving important dates in this development during the last 100 years is most illuminating. Here is a volume heavy to lift, but not ponderous in style, which will certainly soon be found both in the libraries of medical schools and drug laboratories, as well as on the shelves of many a practising physician.

-Dr. Frederick A. Hessel, F.A.I.C.

Ferrites

By J. Smit and H. P. J. Wijn. John Wiley Sons, Inc. 1959, xiv + 369 pages. \$10.00.

Ferrites play an increasingly important part in modern instrumentation and automation and here one can learn their characteristics as they are employed in modern applications. Smith and Wijn, physicists in the research laboratories of Philips at Eindhoven, Netherlands, deal particularly with the extremely important magnetic properties of these "magnetic oxides containing iron as the major metallic component." The book is written on an intermediate rather than an elementary level and presupposes that readers are familiar with the theory of magnetism and with modern structural chemistry of inorganic compounds. For the worker in any of the swiftly advancing fields of

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electronics, magnetism, computers, and automation, the present work provides an indispensable collection and correlation of material and data from widely scattered sources. Furthermore the book suggests modern trends in European progress in these fields.

-D. H. Killeffer, F.A.I.C.

Chemical Books Abroad

DR. RUDOLPH SEIDEN, F.A.I.C.

Johann Ambrosius Barth, Leipzig: Naturwissenschaftliches und medizinisches Latein, by G. Ahrens; 1960, 284 pp.; DM 19.80.—Even though Latin is studied and used more in Europe, this book may be helpful to many scientists and physicians in this country as well. The author reviews the grammar, the use of Latin in pharmacopeias, prescription writing, pharmacology, anatomy, botany, and zoology. The index includes 5000 Latin words.

Deutscher Zentralverlag, Berlin: Das Patentrecht der Laender der Erde, by F. Thieme: 1959, 79 pp.; DM 10.—So that one can easily find the answer to the question of patentability of an invention, the patent laws of 71 countries in all parts of the world and the prerequisites for preparing patent applications are abstracted in 15 columns arranged in table form. A most practical reference book for research workers and patent attorneys.

Akademie-Verlag, Berlin: Organischchemische Arzneimittel und ihre Synonyma, by M. Negwer; 1959, 640 pp.; DM
55.—More than 2200 organic compounds
used therapeutically are reviewed in 2page tables as to molecular and structural formulas, systematic names, synonyms, and uses. They are arranged according to the Hill system to which an
index of 12,000 synonyms is cross-referenced. A helpful book for pharmaceutical
research workers everywhere.

Wissenschaftliche Verlagsgesellschaft, Stuttgart: Gehe's Codex, by F. Diepenbrock; 9th ed., 1403 pp.; DM 145.—An up-to-date edition of the internationally known, standard work of more than 20,000 pharmaceutical specialties from all over the world, so far as they are available in Germany; with information as to their compositions, indications, package forms, and manufacturers. A big, most valuable book for pharmaceutical chemists, to a large extent also understandable to those who do not read German.

Opportunities

Doris Eager, M.A.I.C.

Positions Available

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Senior Marketing Executive. Inorganic chemicals and metallurgical products. Should have record of successful marketing and sales management experience, be a strong leader and personal salesman as well as a professional administrator. \$20,000 plus incentive earnings. Box 105, The Chemist.

Technicians: Correct Employment Practices Vital

To keep technicians happy, recommended practices are:

 Do not misrepresent the job when hiring. Exaggerations about jobs and futurnover rates.

(2) Working conditions should permit the technician to perform his job with as few distractions as possible.

(3) Pay a salary rather than hourly wages. This makes them feel closer to professional status and is one step toward encouraging the career vs. the just-a-job attitude.

(4) Provide educational opportunities. Recognizing technicians' desire to become engineers, many companies set up schedules of training which eventually push technicians up to professional level. Others pay for off-the-job schooling.

(5) Most important of all, recognize the technician's desire to prove his ability. Many companies 'ind technicians capable of professional level performance under proper circumstances. Challenging assignments are the biggest factor in keeping a technician on the job.

-Engineering Employment Practices Newsletter

LEXAN: From a Chemist's Creation to Commercial Production

General Electric Company, in September, placed in operation its new plant at Mt. Vernon, Indiana, for the complete commercial manufacture of "Lexan" polycarbonate resin.

"Lexan," a transparent, thermoplastic resin, with dimensional stability, heat resistance, good electrical properties, and great resistance to impact, has already been accepted in more than 300 commercial applications. Richard Thompson, manager of the market development program, said that these applications range through such fields as the military, electrical, appliance, aircraft, communications, and automotive industries.

This polycarbonate resin was created some four years ago in the General Electric Research Laboratory in Schenectady, N. Y., where Dr. Dan Fox, whose name is on the patent application, was trying to invent a superior insulating material. He came up with a resin made by combining bisphenol A with phosgene, splitting out hydrochloric acid to give a linear polymer, consisting of bisphenol groups joined by carbonate linkages. It exhibited properties over and bevond those of a high-temperature resistant, insulating material. "It looked interesting and we made some more," Dr. L. Burkenshaw of the Market

Development Division, explained.

The way from creation to commercial production is often hazardous and expensive. It was so in this case. After the patent was applied for, it was found that, in West Germany, chemists of Farbanfabriken Bayer AG had simultaneously filed for patent applications on a polycarbonate resin. General Electric and Bayer then cross-licensed each other (non-exclusive licenses) so that the material could be marketed in the U. S. by either.

Intensive development work on "Lexan" then began at the GE plant in Pittsfield, Mass., where it was made in semi-commercial quantities until the new Mt. Vernon plant could be built. From the time the polycarbonate resin was produced in the laboratory until now, General Electric has invested \$11-million in the "Lexan" program, which includes research, development, the pilot plant, marketing research and development, and the construction of the manufacturing plant at Mt. Vernon.

Dr. A. E. Schubert, general manager of the Chemical Materials Department of GE, believes that "Lexan" resin "is one of the most important materials to have come out of America's laboratories in the past decade and that it has an almost unlimited future."

Dr. Roy Moody, manager of research and development activities at the Pittsfield plant, pointed out that "Lexan," consising of a carbonate group linked to an aromatic ring in a polymer chain system, is receptive to a large number of permutations and combinations by substitution, and thus offers many future possibilities. Consequently, experimentation is continuing, at Pittsfield, on polycarbonate elastomers, fibers, and films, including an electrical grade film.

Versatile "Lexan" is non-toxic, self-extinguishing, and non-corrosive. It can be injection molded, extruded, thermal formed, cold formed, used in the fluidized bed process, machined, and solution cast.

Dr. George McCullough is in charge of the Mt. Vernon plant, which is now devoted exclusively to the self-contained manufacture of "Lexan." Its present capacity is in excess of five million pounds of the resin, mostly in pellet form.

Arthur D. Little, Inc., Cambridge 40, Mass., announces that it has established a Life Sciences Division, under Dr. Charles J. Kensler, who has been appointed vice president.

PHOENIX

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Committee on Legislation

Annual Report 1959-60

(Presented at the 37th Annual AIC v. For, held in Minneapolis, Minn.)

This year the Committee had the opportunity to be heard in the Alabama and Texas Legislatures. In these cases the basic issues concerned the chemist and his role in the operation of a clinical laboratory and a pharmaceutical business establishment. Although the Committee feels these legislative actions were not in the best interest of chemists, it should be pointed out that legislators find it difficult to devise legislation which applies to professional groups whose members range from technicians to doctorates. Since legislators do not have the staff to determine the qualifications of professional groups, they revert to registration boards as authorities. Therefore, it would be much easier to persuade legislative bodies, if the Committee represents a registered

At this time the chairman would like to introduce an organizational change which possibly will permit a more efficient operation of this committee. Experience during the past three years has shown that it is difficult to operate a committee with members located in different geographical areas. This is probably due to the lack of time and secretarial help necessary for frequent communication. Therefore, it is recommended that the entire committee be selected from one area so that it can meet more often to plan and discuss its objectives and distribute the workload among its members . . .

Recently, through a publication in The Chemist, the Committee asked its readers for their opinions on the registration of chemists. The Committee received about forty replies, all of which favored some type of registration. However, it would have been informative to hear from the majority. Therefore, to better understand the views of the AIC membership, the Committee believes each Chapter should vote on this proposal because such information could be a guide for future action taken by this Committee...

The Committee on Legislation . . . believes the following proposal should be discussed: Will the National Officers of the AIC support some type of registration?

—M. J. Pro, F.A.I.C.

Chairman

Note: The current chairman of the Committee on Legislation is Dr. Wayne E. Kuhn, c/o Texaco Inc., Beacon, N. Y. Material concerning legislation, or comments, should be sent to him.

The 3rd National Conference on the Application of Electrical Insulation, sponsored by the American Institute of Electrical Engineers and the National Electrical Manufacturers Association, will be held at the Conrad Hilton, Chicago, Ill., Dec. 5-8, 1960.



Dr. Egbert M. Kipp, F.A.I.C., has been appointed manager of Basic Research of Sun Oil Company, Philadelphia 3, Pa. He was formerly assistant to the manager of product development in the Research and Development Department.

Ernest Wolf, M.A.I.C., has been promoted to manager of chemical sales for the international division of Baxter Laboratories, Inc. of Morton Grove, Ill. The International Division is located at Staten Island, N. Y.

Dr. Albert C. Zettlemoyer, F.A.I.C., professor, Lehigh University, Bethlehem, Pa., was chairman of the American delegation to the Third International Congress of Surface Activity, held Sept. 12-17, at Cologne, Germany. He presented two papers: "Chemisorption on Oxide Surfaces" (Dr. John J. Chessick, co-author) and "Heats of Adsorption of Surfactant Ions to the Graphon Solution Interface" (John D. Skewis, co-author).

Dr. Moses Konigsberg, F.A.-I.C., vice president of Polymer Industries, Inc., of Springdale, Conn., has been assigned full responsibility for market planning for this subsidiary of Philip Morris, Inc. He was one of the co-founders of Polymer Industries.

Dr. George Naimark, F.A.I.C., has joined Burdick & Becker, Inc., 630 Third Ave., New York 17, N. Y., as director of scientific services.



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Dr. Charles Allen Thomas, Hon. AIC, has been elected a director of the Metropolitan Life Insurance Company, New York, N. Y. He is chairman of Monsanto Chemical Co., St. Louis, Mo.

Dr. Saul Gordon, F.A.I.C., of Picatinny Arsenal is now assistant professor of the chemistry department of Fairleigh-Dickinson University at the Florham-Madison Campus, Madison, N. J. He will continue his affiliation with the Pyrotechnics Laboratory at the Arsenal as staff specialist for chemistry, in addition to his association with Gordon & Campbell, consulting chemists, Morristown, N. J.

Andrew E. O'Keeffe, F.A.I.C., has been appointed research associate of Keuffel & Esser Co., Hoboken, N. J. He will specialize in electrophotographic research and techniques.

Joseph C. Shediack, M.A.I.C., is now with Beverage Flavors, Inc., of Hawthorne, N. J., as production and senior development chemist.

Dr. Walter G. Whitman, Hon. AIC, on leave from Massachusetts Institute of Technology, where he is chairman of the Department of Chemical Engineering, is now science advisor to the Secretary of State, Christian A. Herter. Dr. Whitman replaces Dr. Wallace R. Brode, retired.

Dr. M. F. Hawthorne, F.A.I.C., head, Metallo-organic Group, Rohm and Haas Co., Redstone Arsenal, Huntsville, Alabama, is a visiting lecturer at Harvard University for the Fall semester.

Dr. Harold M. Sonnichsen, F.A.I.C., has joined the Dewey & Almy Chemical Division, W. R. Grace & Co., Cambridge, Mass., as director of fiber and saturant research for the Polyfibron division.

Dr. Carroll A. Hochwalt, F.A.-I.C., vice president of research, Monsanto Chemical Co., St. Louis 66, Mo., announces that Dr. Chung Yu Shen, research chemical engineer, has been promoted to the position of scientist.

Dr. Hugh W. Field, retired vice president and general manager of research and development for Atlantic Refining Co., 2700 Passyunk Ave., Philadelphia, Pa., died August 28, 1960, at the age of 54. He received the honor scroll of the Pennsylvania AIC Chapter in December, 1953. (See The Chemist, March, 1954.)

Dr. John E. McKeen, Hon. AIC, president and chairman of the board of Chas. Pfizer & Co., Inc., has been appointed chairman of the Pharmaceutical & Chemical Industry Division in the 1960 volunteer fund raising campaign for the New York State Citizens Committee for the Public Schools.

Dr. Bernard L. Oser, F.A.I.C., president and director of Food and Drug Research Labs., Inc., Maspeth, N. Y., announces the appointment to the staff of Dr. William B. Langan, who comes from the faculty of New York Medical College.

Stanford Research Institute is sponsoring a "Symposium on Chemical Reactions in the Lower and Upper Atmosphere," April 18-20, 1961, at San Francisco. Correspondence should be directed to R. D. Cadle, Stanford Research Institute, Menlo Park, Calif.

The Association of Consulting Chemists & Chemical Engineers, Inc., will hold its Annual Meeting and Symposium, Oct. 25, 1960, at the Hotel Shelburne, New York, N. Y. The subject is "The Role of Science in Advertising."

The name of the William M. Rice Institute of Houston, Texas, has been changed to William Marsh Rice University.

Professional Appointments

Oct. 4, 1960. Niagara Falls, N. Y. Red Coach Inn. Buffalo Ave. & Main St. Meeting of Niagara Chapter. Social Hour, 6:00 p.m. Dinner, 7:00 p.m. Meeting, 8:00 p.m. Speaker: Peter F. Casella, Manager, Patent Department, Hooker Chemical Corp. Subject: "The U. S. Patent System." For reservations (dinner \$3.00), Dr. J. Frederic Walker, c/o E. I. du Pont de Nemours & Co., Niagara Falls, N. Y. (BU 5-7831, Ext.

421).

Oct. 11, 1960. Chicago, Ill. Furniture Mart Building, 667 McClurg Court. Meeting of Chicago Chapter. Reception 6:00 p.m. Dinner 7:00 p.m. Presentation of Honor Scroll to Edward L. Gordy, F.A.I.C., Communications Coordinator, Standard Oil Company (Indiana). Introduction, Dr. Robert Marschner, Standard Oil Co. (Indiana). Subject: "The Chemist-at-Large." Presentation of Honor Scroll, Dr. Milton Harris, AIC President. Acceptance address, Phrase Rule." Send reservations (Dinner ticket \$7.00) to Howard Rosenthal, c/o Schaar & Company, 7300 W. Montrose Ave., Chicago, Ill.

Oct. 20, 1960. Constableville, N. Y. Meeting of Beaver Falls Chapter. Speaker: T. Simonton, Patent Attorney, Cazenovia, N. Y. Subject: "Patent Law -A Little Knowledge is a Dangerous Thing." For information: Carlton Force, Latex Fiber Industries, Beaver Falls,

N. Y

Oct. 20, 1960. Minneapolis, Minn. (Place to be announced) Meeting of Twin City Chapter, Speaker, Dr. Harry F. Lewis of the Institute of Paper Chemistry, Appleton, Wis. Subject: Modernizing the Teaching of Chemistry in High School and College." (Twin City high school chemistry teachers to be invited.) For information: Dr. H. L. Weisbecker, 2138 Berkeley Ave., St. Paul, Minn.

Oct. 27, 1960. Greenwich, Conn. Greenwich Hospital, Hyde Room. Organization meeting for Western Connecticut Chapter. William J. Donnelly, director of the Hospital will welcome those attending. Dr. Frank J. Steele, F.A.I.C., and Dr. Kurt S. Konigsbacher, F.A.I.C., are making the arrangements. Meeting 8:00 p.m. Officers will be

elected. Committees will be set up. Program will be planned.

Nov. 3, 1960. Philadelphia, Pa. Engineers' Club. Meeting of Philadelphia Chapter. Dinner 6:30 p.m. Talk: 8 p.m. Speaker: Dr. Claude Hills, Chemist, U.S.D.A., Eastern Regional Laboratory, Philadelphia. Topic: "The Philosophy and Methodology of Science." Please make dinner reservations by Oct. 31 with: Dr. C. K. Deischer, Harrisson Laboratory, University of Pennsylvania, Philadelphia 4, Pa. (EVergreen 6-0100, Ext. 8317).

Nov. 3 or 4. Meeting of Alabama Chapter during South Eastern Regional Meeting of the American Chemical Society. For information, Robert E. Lacey, 141 Kenilworth Drive, Birmingham,

Ala.

Nov. 16, 1960. New York, N. Y., The Chemists' Club, 52 E. 41st St., Meeting of New York Chapter. Speaker: George Polzer, Executive Vice President, Ultra Chemical Works, Paterson, N. J. Subject: "Purchasing-its Importance to the Project." (Part of the theme, "What Every Chemist Should Know About the Chemical Business.")

Dec. 1, 1960, Constableville, N. Y. Meeting of Beaver Falls Chapter. Speaker, J. D. Parker, Atomic Energy of Canada Ltd. Subject: "Radioisotope Applications." For information: Carlton Force, Latex Fiber Industries, Beaver Falls, N. Y.
Dec. 6, 1960 (Tentative) Niagara

Falls, N. Y. Meeting of Niagara Chapter. Speaker: Dr. Milton Harris, AIC President. For information: Dr. J. Frederic Walker, c/o E. I. du Pont de Nemours & Co., Niagara Falls, N. Y.

Dec. 7, 1960. New York, N. Y. The Chemists' Club, 52 E. 41st St. Meeting of AIC Board of Directors and National Council. Board meets at 5:30; Council at 6:00 p.m.

Dec. 7, 1960. New York, N. Y. The Chemists' Club, 52 E. 41st St., Meeting

of Advisory Board of The Chemist. Luncheon 12 noon

Dec. 9, 1960. Minneapolis, Minn. (Place to be Announced) Meeting of Twin City Chapter. Panel discussion. Subject to be announced. (Possibly a follow-up on what the modernized teaching will mean for the profession of chemistry.) For information: Dr. H. L. Weisbecker, 2138 Berkeley Ave., St. Paul, Minn.

Jan. 19, 1961. Minneapolis, Minn. (Place to be announced) Honor Scroll Presentation meeting of Twin City Chapter. Dr. Milton Harris, AIC President will discuss program and plans for AIC. For information: Dr. H. L. Weisbecker, 2138 Berkeley Ave., St. Paul, Minn.

Jan. 19, 1961. New York, N. Y., The Chemists' Club, 52 E. 41st St. Meeting of the New York Chapter. Speaker, Robert Kampschulte, Vice President, Sales, Celanese Chemical Co., New York, N. Y. Subject, "Marketing." (Part of the theme, "What Every Chemist Should Know about the Chemical Business.)

Feb. 10, 1961. New York, N. Y. Place to be announced. Joint AIC-ACS meeting under the auspices of the ACS. Subject and speakers to be announced.

Feb. 16, 1961. Watertown, N. Y. Speaker: Dr. Johan Bjorksten, President, Bjorksten Research Labs., Madison, Wis. Subject: "Aging and Its Professional Implications." Ladies Invited. For information: Carlton Force, Latex Fiber Industries, Beaver Falls, N. Y.

Mar. 2, 1961. Minneapolis, Minn.
(Place to be announced) Joint meeting of Twin City Chapter with Minnesota Section ACS, Twin City Section of AlChE, and the Minnesota Industrial Chemists Forum. For information: Dr. H. L. Weisbecker, 2138 Berkeley Ave., St. Paul, Minn.

Apr. 13, 1961. Watertown, N. Y. Meeting of Beaver Falls Chapter with TAPPI. Speaker, Dr. K. A. Arnold, T.D., St. Regis Paper Co., New York, N. Y. Subject: "The Planning of a Technical Center." For information: Carlton Force, Latex Fiber Industries, Beaver Falls, N. Y.

April 20, 1961. New York, N. Y. Place to be announced. Meeting of New York Chapter. Presentation of Honorary AIC Membership to Dr. Lloyd Van Doren, retired AIC Secretary. Subject of discussion, "Chemical Patent Procedure."

May 11-12, 1961. Washington, D.C. Statler Hotel, 38th Annual AIC Meeting. The Washington Chapter will be our host.

May 12, 1961. Minneapolis, Minn. (Place to be announced) Meeting of Twin City Chapter. Presentation of student medals. For information: Dr. H. L. Weisbecker, 2138 Berkeley Ave., St. Paul, Minn.

May 25, 1961. New York, N. Y. Place to be announced. Presentation of the Honor Scroll of the New York Chapter. Honoree and details to be announced.

The American Institute of Physics, the Instrument Society of America, and the National Bureau of Standards will sponsor a national symposium on "Temperature—its Measurement and Control in Science and Industry," in Columbus, Ohio, March 27-31, 1961.

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Postgraduate study is important and therefore, each year of successfully completed postgraduate studies in chemistry or chemical engineering, to a maximum of three years, may be considered as equivalent to an equal amount (or maximum of four years) of progressive experience in the qualifications for membership as Fellow or Member.

Member Membership:

A candidate for Member should have successfully completed four years of collegiate work in chemistry or chemical engineering in an educational institution acceptable to the Council and in addition have had four years of progressive experience and responsibility in the practice of the profession, satisfactory to the Council. (Also see second paragraph under Fellow Membership.).

Associate Membership:

A candidate for Associate should have successfully completed four years of college work in chemistry or chemical engineering in an educational institution acceptable to the Council.

The National Council will consider "equivalent" qualifications in special cases.

The information above is taken from ARTICLE VI of the AIC By-Laws, page 132 of the April, 1958, issue of The Chemist.

(Please turn the page and fill in the names and addresses of ten of your friends who are qualified for AIC membership.)

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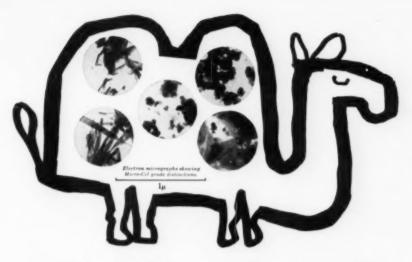
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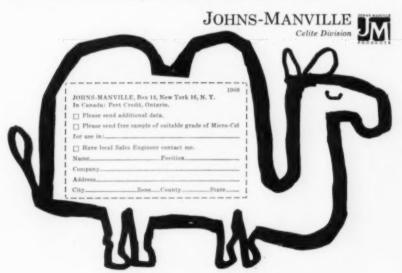
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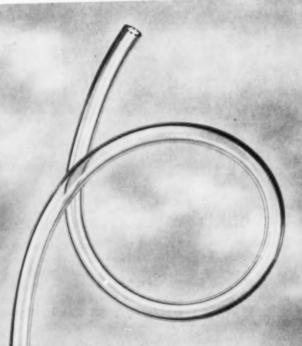
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